



DOMEKT RECU 300/350/450VE(W)-B-AC/EC

Series Air Handling Units

Installation and Maintenance Service Manual

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Safety Requirements



- To avoid accidents and/or unit damage, only a trained technician must carry out the connection.
- The appropriate Personal Protective Equipment (PPE) attire is worn relative to the operation being carried out.
- Electrical equipment is rated, connected and earthed in accordance with CE regulations.

The air handling unit must be plugged in to an electrical outlet (with earth), which is in good order and corresponds with all requirements of electric safety.

Before starting any operations inside the unit, make sure that the unit is switched off, and the power cable is unplugged.



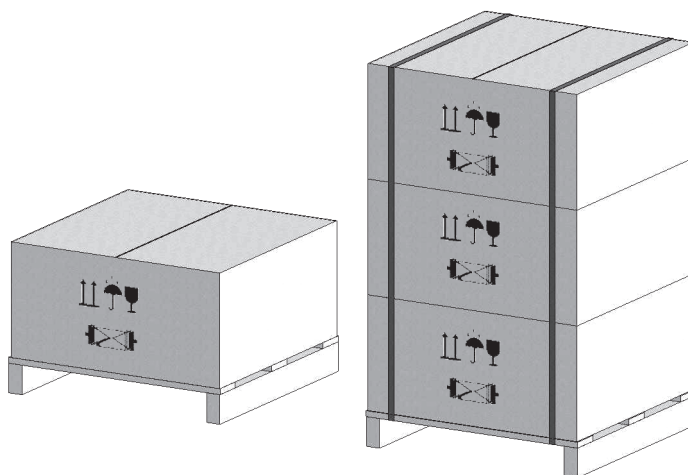
- Earth must be installed according EN61557, BS 7671.
- The unit should be installed according to Installation and Maintenance Manual.
- Before starting the unit, check correct position of air filters.
- Service maintenance should be carried out only in conformity with the instructions specified herein below.
- If main cable is damaged, only manufacturer, service team or trained technician must change it in order to avoid accidents.

Transportation

The air handling units are ready for transit and storage (1 Picture). The unit is packed to prevent damage of the external and internal parts of the unit, dust and moisture penetration.

The unit is packed to box after that corners of the air handling units are protected against the damage – protective corners are used. The entire unit is wrapped up in protective film. For transit or storage, units are mounted on timber pallets. The unit is fastened to the pallet with polypropylene packing tape over protective corners.

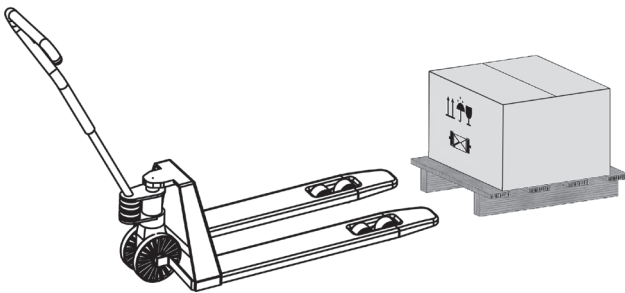
Air handling unit ready for transit and storage



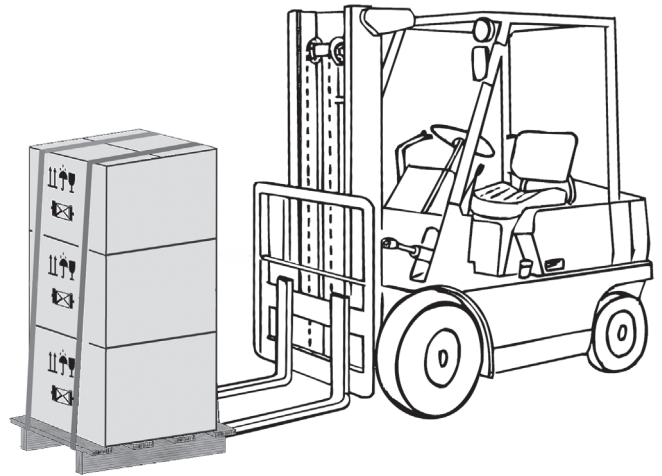
1 Picture

Forklift truck or hand pallet truck can transport air handling unit as it is shown (2 a, b Pictures).

Air handling unit transportation by forklift truck or hand pallet truck



2 a Picture



2 b Picture

- 2 a Unit is transported by hand pallet truck on a wooden pallet;
- 2 b Unit is transported by forklift truck on a wooden pallet.

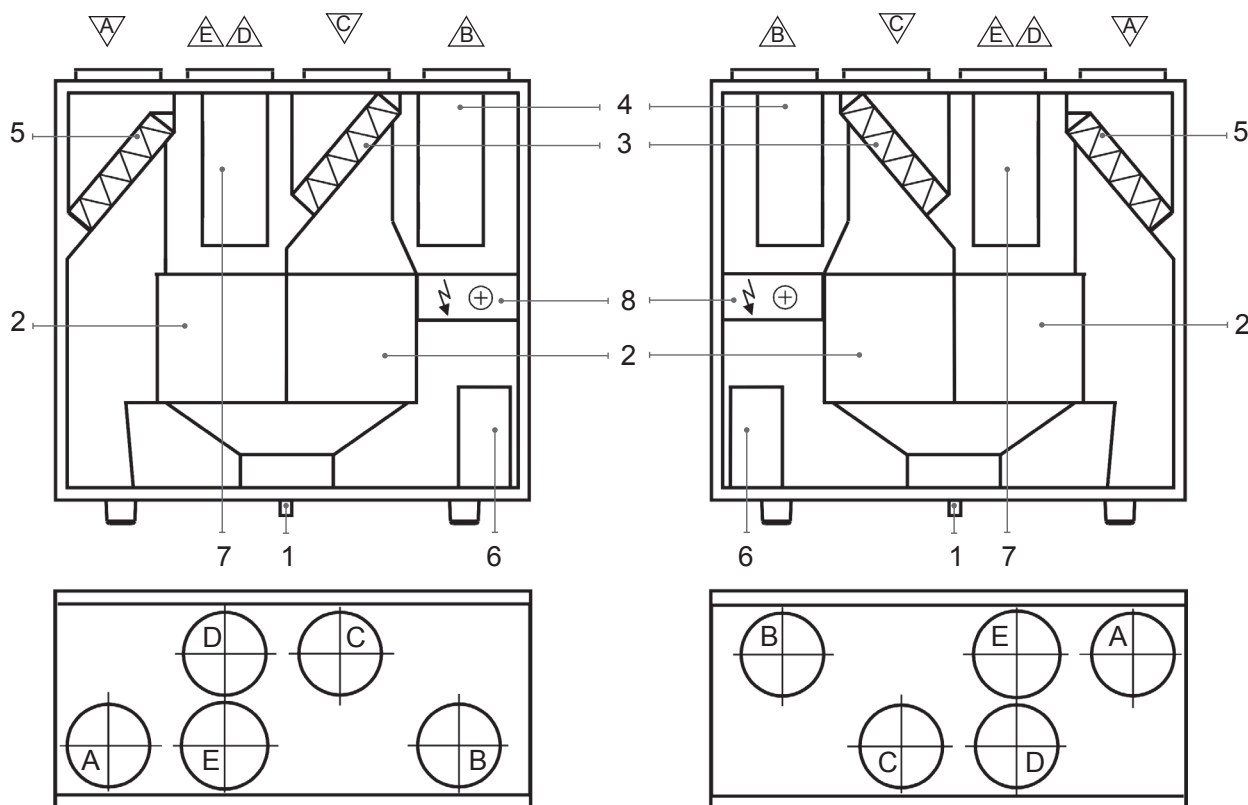
The unit should be examined upon receipt, to ensure that no visible damage has occurred during transit, and the advice note checked to ensure that all items have been received. If damage or delivery shortages are discovered, the carrier should be immediately informed. AMALVA should be notified within three days of receipt, with a written confirmation sent within seven days. AMALVA can accept no responsibility for damage by unloading from carrier or for subsequent damage on site.

If the unit is not to be installed immediately, it should be stored in a clean, dry area. If stored externally, it should be adequately protected from the weather.

Brief Description of the Unit

- The air handling units are intended for ventilation of small and medium-sized spaces (eg. single family houses, offices, etc.), having operating ambient temperature and relative humidity. The unit is intended to be installed in the kitchen or other domestic premises. Mineral wool is used for thermal insulation and sound attenuation. Units cover panels are 25 mm thick. As standard, the unit is designed for indoor placement. The operating temperature range for the unit is $-30^{\circ}\text{C} \dots 40^{\circ}\text{C}$, outdoor air temperature. The air handling unit is not to be used to transport solid particles, even not in areas where there is a risk of explosive gases.
- DOMEKT RECU 300/350/450VE(W)-B (3 Picture) series units are equipped with a plate heat exchanger, air filters, an electric air heater, fans and automation control system, to ensure safe and efficient operation of the unit.
- Before you open the door, the unit must be switched off and the fans must have been given time to stop (up to 3 minutes).
- The unit contains heating elements that must not be touched when they are hot.
- To maintain a good indoor climate, comply with regulations and, to avoid condensation damage, the unit must never be stopped apart from during service/maintenance or in connection with an accident.
- If the unit is placed in spaces with high humidity, condensation might occur on the surface of the unit when outdoor temperatures are very low.

DOMEKT RECU 300/350/450VE(W*)-B-AC/EC Air Handling Unit Scheme



1. Drainage
2. Plate heat exchanger
3. Exhaust air filter
4. Supply fan
5. Supply air filter
6. Automation control system
7. Exhaust fan
8. Electric air heater

- ▷ A. Outdoor intake
- ▷ B. Supply air
- ▷ C. Extract indoor
- ▷ D. Exhaust air
- ▷ E. By-pass – extraction without heat recovery

3 Picture

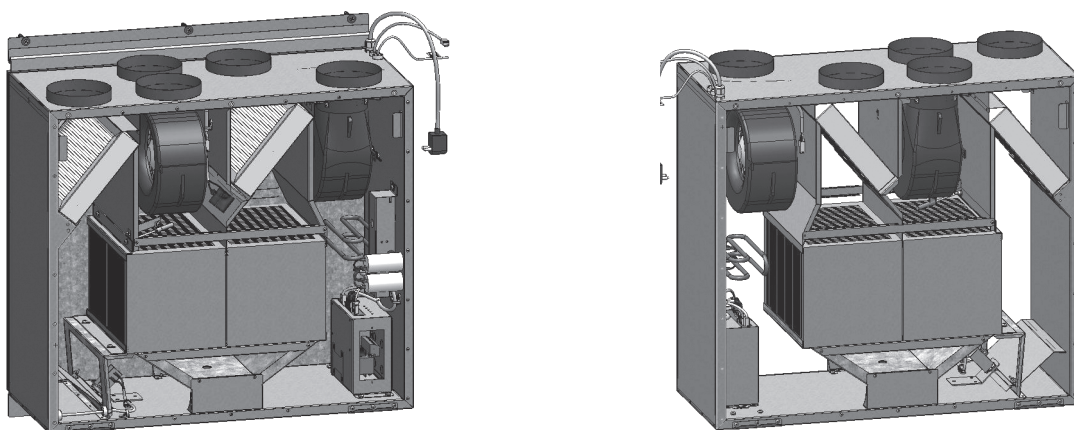
W* - Ducted DH water heater.

Note: to reduce the noise level to the premises, it is recommended to install sound attenuators in the ducts.

Installation

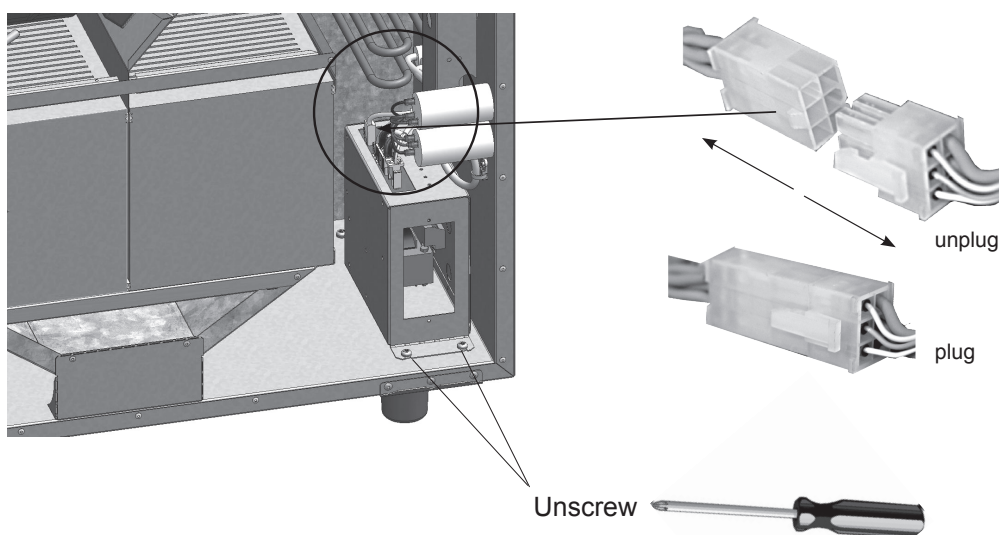
Unit Inspection

Before installing the unit, inspection must be carried out. Unit has removable panels from its both sides (4 Picture).



4 Picture

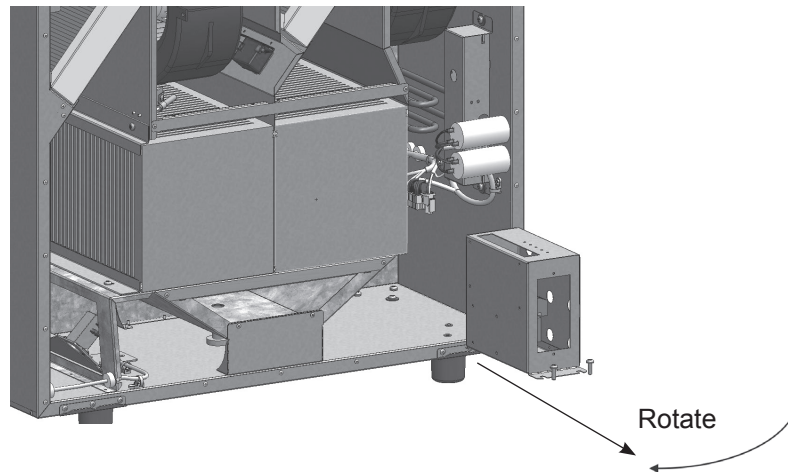
All internal unit components can be extracted from inspection side. After choosing desired inspection side, it is necessary to check if automatics box are positioned correctly. Automatics box are maintained from inspection side. Picture 4 shows unit with right-hand inspection side. To get unit with left-hand inspection side, internal unit elements must be turned round. Remove both unit's panels, which afterwards must be counterchanged to have possibility of other side inspection. Start with automatic box (5 Picture). Unplug cables before rotating automatic box.



5 Picture

Unscrew the bolts inside unit to dismount automation box, after that it can be rotate.

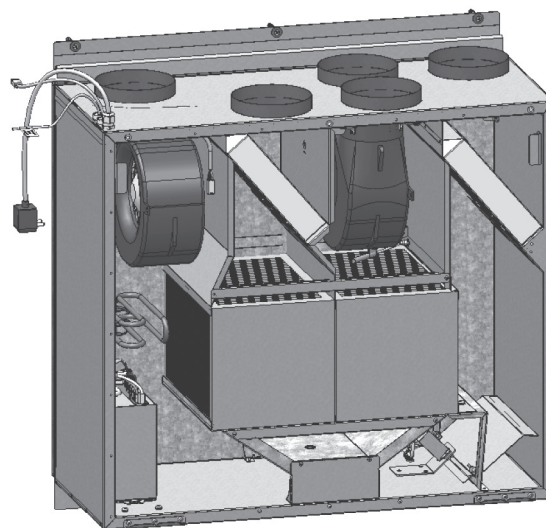
Taking off the switch from the unit it is needed to take it apart from each other and check if the contacts are fouled.



6 Picture

Do not forget plug in the cables into automation box.

Picture 7 shows unit from right-hand inspection side.



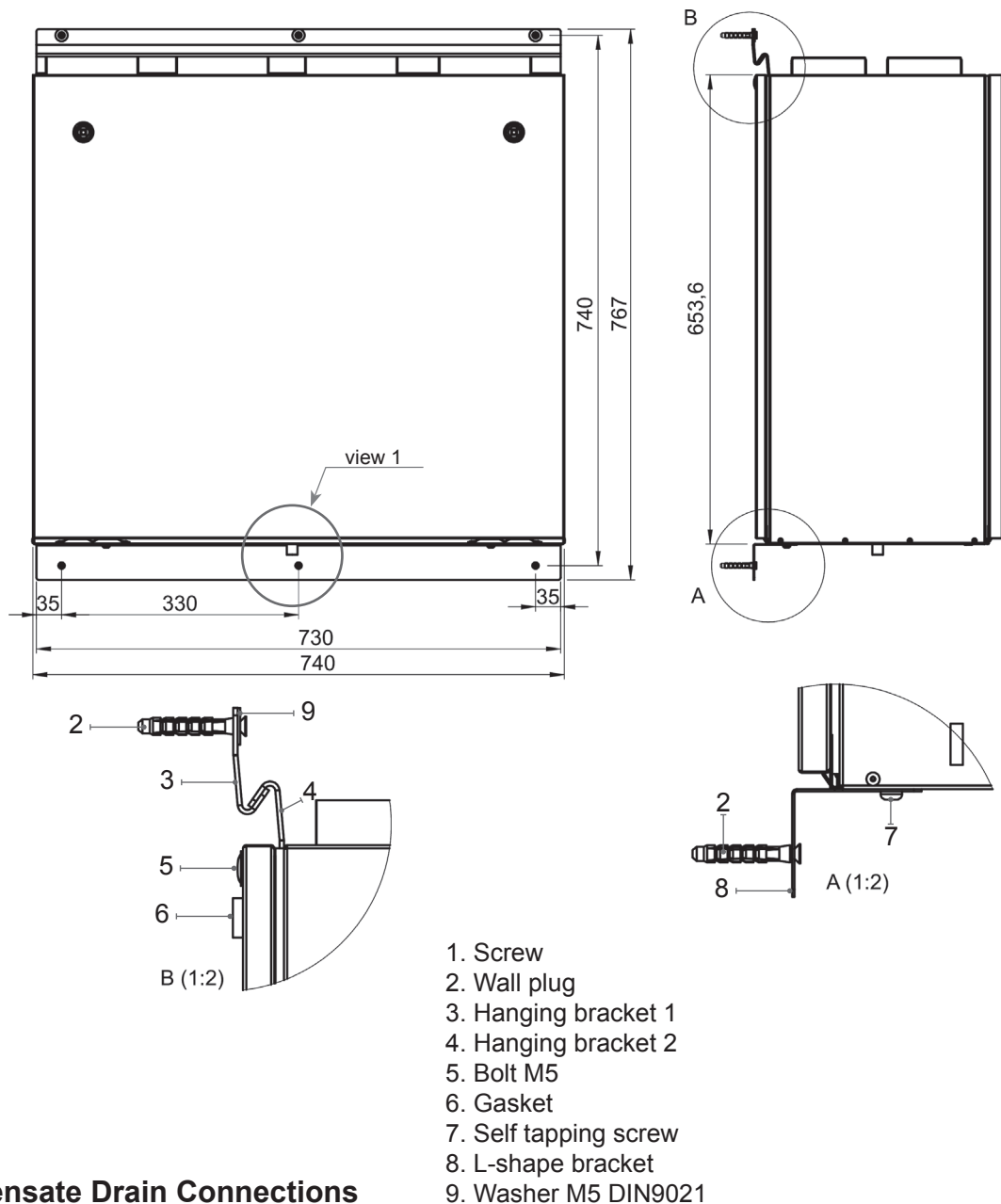
7 Picture

Do not forget to put on elements for hanging before screwing on back panel.

The place for the unit should be selected with allowance for minimum access to the unit for maintenance and service inspection. The minimum free space in front of the inspection panel should be not less than 350 mm.

It is recommended to install the air handling unit in a separate room (8 Picture).

Unit brackets' positions



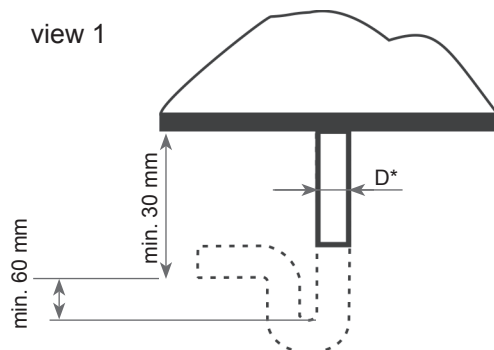
8 Picture

Condensate Drain Connections

All condensate drain connections must be correctly trapped. Incorrect trapping can result in flooding within the unit and consequent flooding of the immediate area. Fill the drain trap with water before starting up the unit.

All drain lines should be insulated where passing through any space where damage from condensation drip might occur. If the unit is installed in unheated premises the condensate pipe should be heat-insulated and heated with heating cable.

A condensate pipe and a drain trap



8 a Picture

Final Inspection

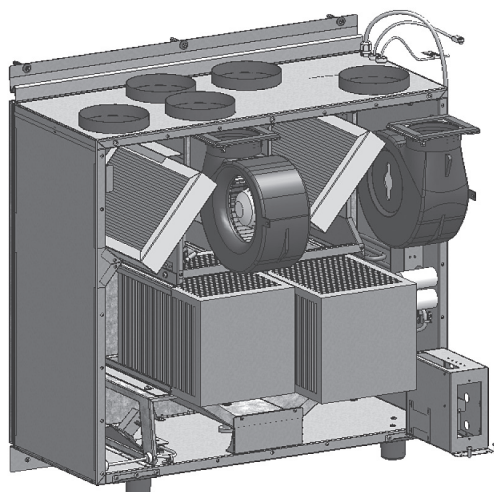
After installation of the unit, a thorough inspection should be carried out. This should include inspecting the inside of the unit and removing debris and tools, which may have been left behind by on site contractors. Replace any panels, which may have been removed and close all access doors, ensuring that the door sealing gaskets have not been damaged.

Maintenance



Before performing any inspection work, check whether the unit is switched off from the electric power supply.

It is recommended to carry out routine maintenance of the air handling unit KOMFOVENT DOMEKT RECU 300/350/450VE(W)-B-AC/EC – 4 times per year. Extracting unit elements (see 9 Picture). Cables must be disconnected when extracting automation box, plate heat exchanger, fans.



9 Picture

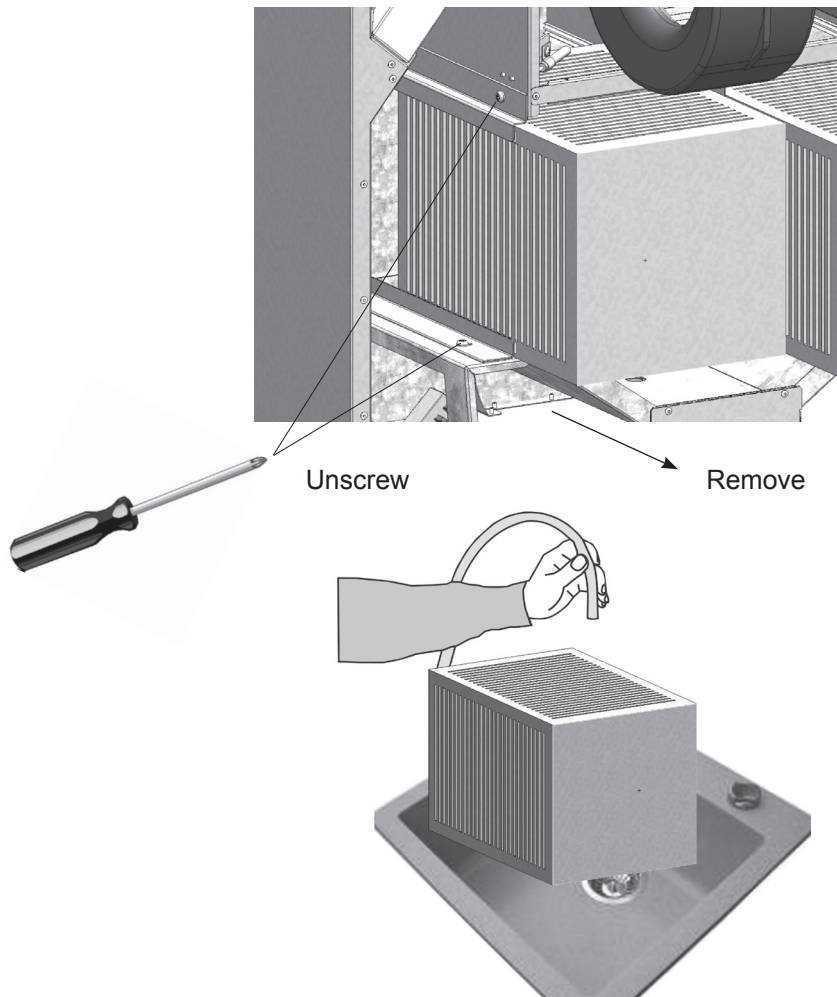
During inspection, the following operations should be performed:

1. **Plate heat exchanger check.** Inspection and dedusting of the plate heat exchanger is performed once per year (it is removed from the unit (10 Picture) and blown with an air blast or washed with tepid water).

Note: plate heat exchanger may be replaced with summer cassette (for units without by pass), when recuperation is needless.

Plate heat exchanger cleaning. If plate heat exchanger cleaning by compressed air is not effective, it can be washed with soapsuds (11 Picture), or if needed – use degreasing soak for metal (aluminum) cleaning. Leave plate heat exchanger to dry in a warm place. It can be mounted only when it is absolutely dry.

Plate heat exchanger cleaning



10 Picture

11 Picture

2. **Fans check** (once per year). Polluted fans decrease efficiency.



Before performing any inspection work, check whether the unit is switched off from the electric power supply.

Fans should be carefully cleaned with textile or soft brush. Do not use water. Do not break balance. Check if fan freely rotates and is not mechanically damaged, if impeller does not touch suction nozzles, fan does not spread noise and mounting bolts are screwed.

3. **Air heater check.** Check if electric air heater is properly fixed, wires connections are not damaged and heating elements are not bent. They can be damaged or bent due to uneven heat or uneven and turbulent air direction. Check if electric air heater is clear of unnecessary things and heating elements are not clogged, because this can cause unpleasant smell or in the worst case – dust can start burning. Air flow through the air heater should be greater than 1,5 m/s. Heating elements can be cleaned with hoover or wet textile.
4. **Air filter clogging check.** Change air filters when air filter clogging is indicated. We recommend to change filters at least twice per year: before and after heating season, or more*. Filters are one time used. We do not recommend cleaning them. Stop the air handling unit before changing filters.

*** Clogged filters unbalance ventilation system, air handling unit uses more power.**

Technical Information

Specifications

RECU 300/350/450VE(W)-B-AC/EC	Dimensions	AC VE/VW	EC VE/VW	EC (2 type) VE/VW
Nominal air flow	m ³ /h	350	450	300
Unit weight	kg	42	42	42
Heater capacity	kW	1,0	1,5	1,0
Fans input power	W	2 x 137	2 x 172	2 x 70
Supply voltage	V / Hz	~230 / 50 / 1 phase	~230 / 50 / 1 phase	~230 / 50 / 1 phase
Maximal operating current	A	5,76 / 1,41	6,0/1,65	5,1/0,76
Ducts connection	mm	125	125	125
Thermal efficiency of plate heat exchanger up to	%	87	87	87
Energy recovery of plate heat exchanger up to	kW	3,8	3,8	3,8

Filters

	Supply air	Exhaust air
Filter class	F5 / F7	F5 / F7
Filter type	Panel	Panel
Filters dimensions bxxhxl, mm	300x200x46	300x200x46

Acoustic data of RECU 300VE(W)-EC

		63	125	250	500	1000	2000	4000	8000	dB(A)
Supply	Inlet	49	47	43	43	45	41	38	36	48.8
	Outlet	55	56	54	54	54	52	50	48	59.0
Exhaust	Inlet	49	47	43	43	45	41	38	36	48.8
	Outlet	55	56	54	54	54	52	50	48	59.0
Kitchen Hood Inlet		53	51	47	48	50	49	47	45	55.2
Surrounding at 3 m distance)		47	47	44	38	32	29	25	22	40.3

Acoustic data of RECU 350VE(W)-AC

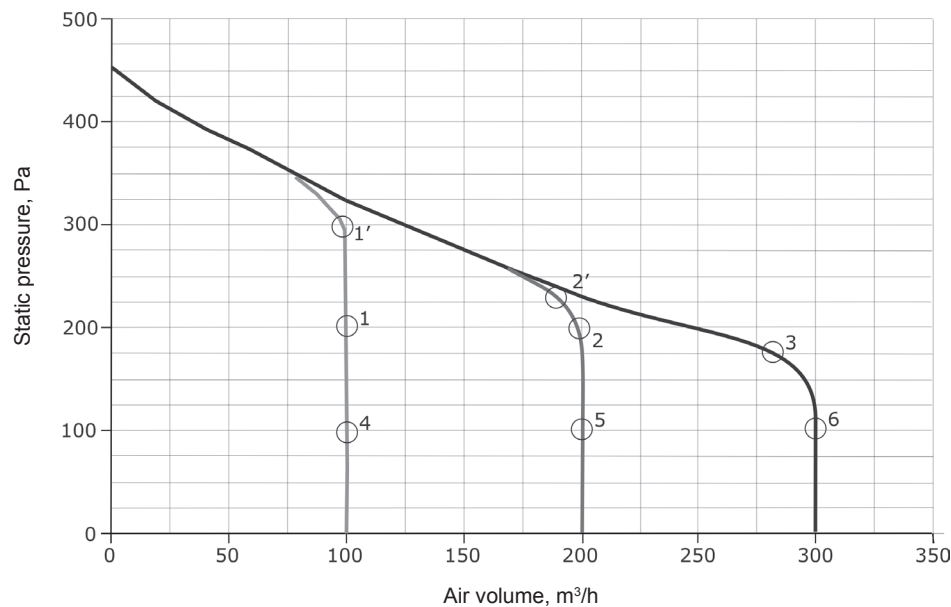
		63	125	250	500	1000	2000	4000	8000	dB(A)
Supply	Inlet	55	52	48	48	50	46	43	41	53.7
	Outlet	62	62	61	60	60	58	56	53	65.0
Exhaust	Inlet	55	52	48	48	50	46	43	41	53.7
	Outlet	62	62	61	60	60	58	56	53	65.0
Kitchen Hood Inlet		59	57	53	53	56	54	52	50	60.8
Surrounding at 3 m distance)		53	53	49	43	36	33	28	25	45.5

Acoustic data of RECU 450VE(W)-EC

		63	125	250	500	1000	2000	4000	8000	dB(A)
Supply	Inlet	58	55	50	50	53	48	45	43	56.2
	Outlet	65	66	64	63	63	61	59	56	68.0
Exhaust	Inlet	58	55	50	50	53	48	45	43	56.2
	Outlet	65	66	64	63	63	61	59	56	68.0
Kitchen Hood Inlet		62	60	55	56	59	57	55	52	63.5
Surrounding at 3 m distance		56	56	52	46	39	35	30	26	48.1

RECU 300/350/450VE(W) Performance

RECU 300VE(W*)-B-EC

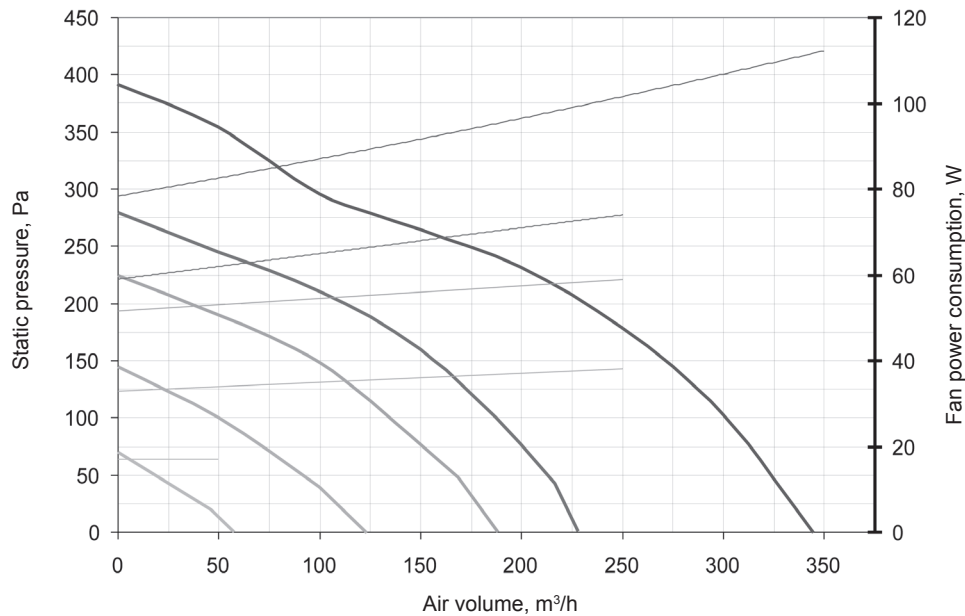


Fan power consumption

Position	W
1	33
1'	40
2	51
2'	59
3	67
4	22
5	34
6	61

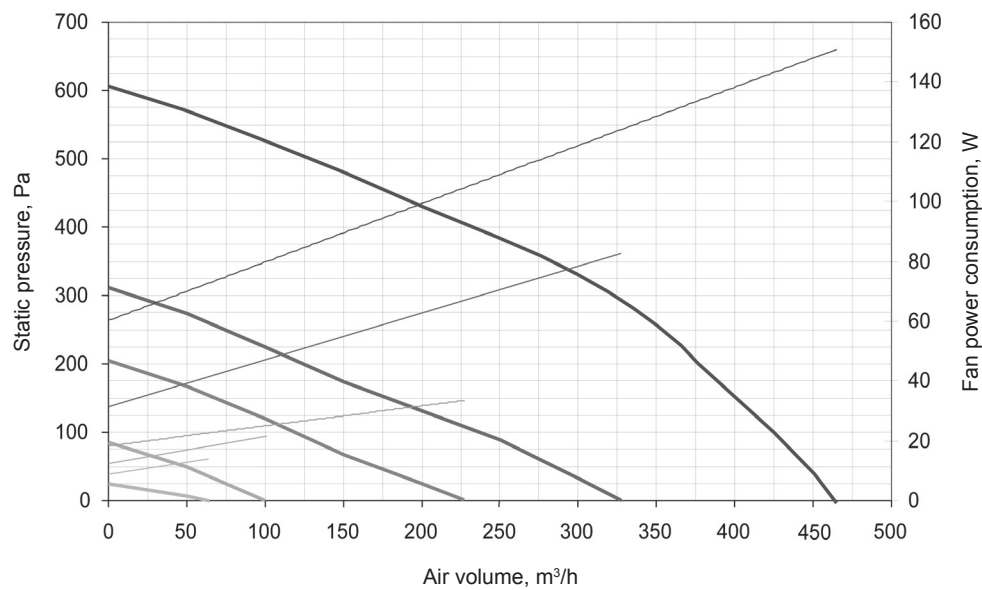
* Correction factor - 15Pa

RECU 350VE(W*)-B-AC



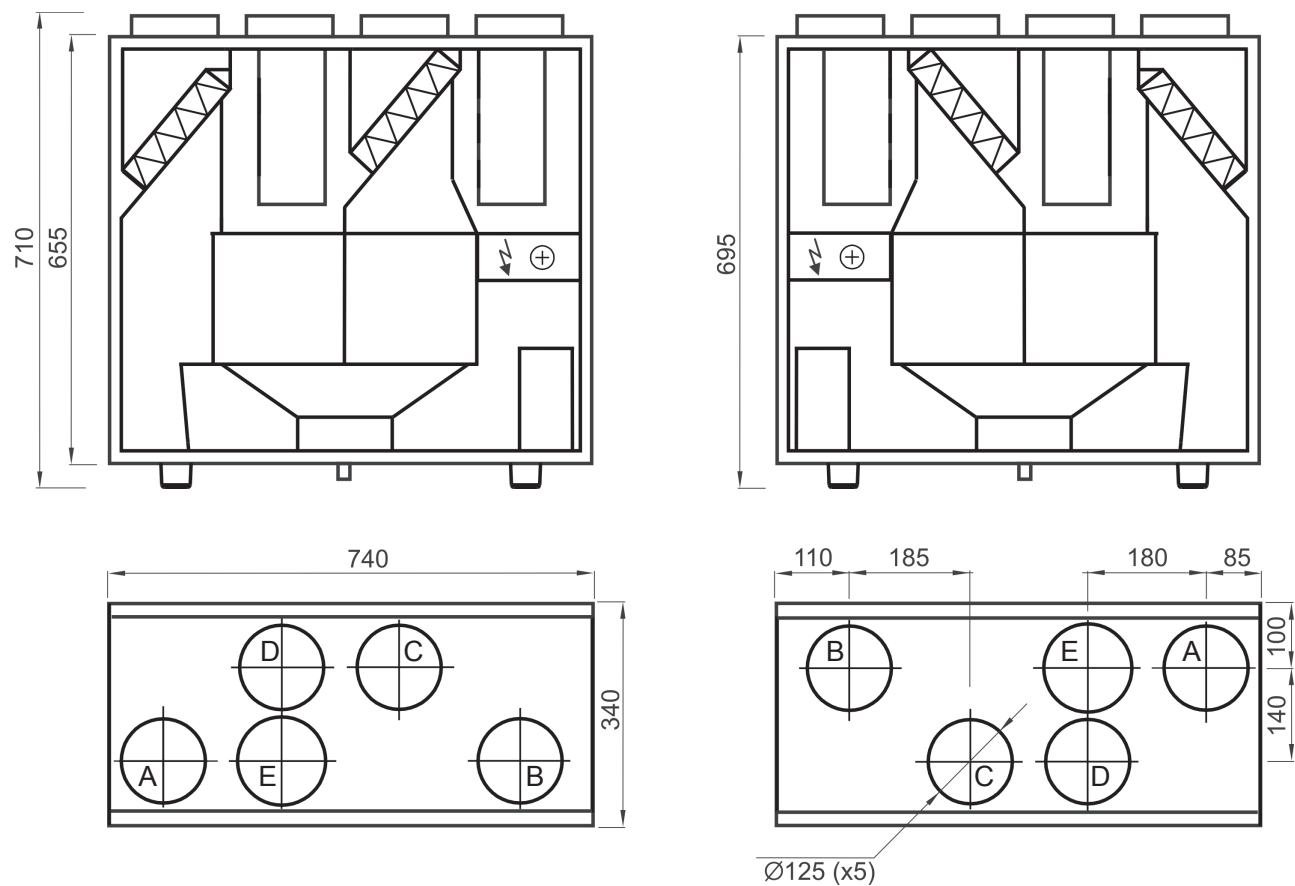
* Correction factor - 15Pa

RECU 450VE(W*)-B-EC



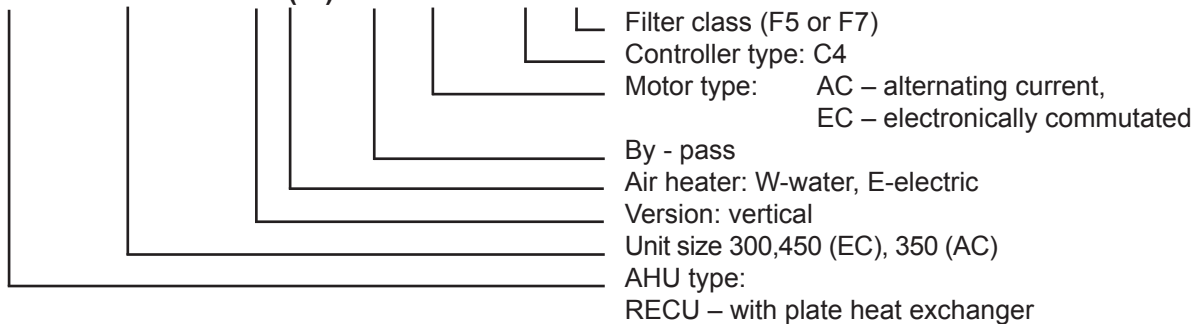
* Correction factor - 15Pa

Scheme



Ordering Key

RECU-300/350/450 -VE(W) - B AC/EC -C4 -F





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